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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/507,079	10/08/2004	Brian William Holmes	121058	2364
25944 7590 12/14/2009 OLIFF & BERRIDGE, PLC P.O. BOX 320850 ALEXANDRIA, VA 22320-4850				
EXAMINER				
CHANG, AUDREY Y				
ART UNIT		PAPER NUMBER		
2872				
MAIL DATE		DELIVERY MODE		
12/14/2009		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/507,079

Applicant(s)

HOLMES, BRIAN WILLIAM

Examiner

Audrey Y. Chang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on September 2 and 29, 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 32, 71, 74-90 and 93-131 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 32 is/are allowed.
- 6) ☒ Claim(s) 32, 71, 74-90, 93-104 and 106-131 is/are rejected.
- 7) ☒ Claim(s) 105 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on **September 29, 2009** has been entered.
2. This Office Action is also in response to amendment filed on September 2, 2009, which has been entered into the file.
3. By this amendment, the applicant has amended claims 71, 74, 87, 104, 117, 121 and 131 and has canceled claims 72-73, and 91-92.
4. Claims 32, 71, 74-90 and 93-131 remain pending in this application.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. **Claims 71, 74, 75, 77 79-80, 82-86, 87-89, 93-95 and 98-103 are rejected under 35 U.S.C. 103(a) as being unpatentable over the patent issued to Mallik (PN. 5,128,779) in view of the patents issued to Heckenamp et al (PN. 5,801,857), Yu et al (PN. 5,282,066), and Cueli et al (PN. 5,513,019).**

Mallik teaches an *authentication item*, serves as the *security device*, that is comprised of a *first and second holographic relief structures*, (23 and 103, Figure 11 or 121 and 127, Figure 12), that serve as the first and second *diffraction or holographic optically variable effect generating structures* wherein the

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first and second holographic relief structures are *superposed* to each other with the second holographic relief structure is viewable through the first holographic relief structure.

This reference has met all the limitations of the claims. Mallik teaches that the first and second holographic structures may include micro-relief structures of embossed holograms. It however does not teach explicitly that the second holographic structure is a volume hologram. But one skilled in the art must know that both embossed hologram and volume hologram are well-known types of hologram in the art that are commonly used in authentication art to provide security features. Such is explicitly taught by **Heckenkamp** et al that both embossed hologram and volume hologram are widely used as security features, (please see column 4, lines 23-36). It would then have been obvious to one skilled in the art to select one type than the other such as to replace embossed hologram by volume hologram for the purpose of design choice and for the purpose of providing better diffraction efficiency.

Mallik teaches explicitly that the authentication item via the discontinuous hologram is formed in a pattern to permit viewing the protected information through it and the viewing of an authenticating image or other light pattern reconstructed from the it in reflection can be viewed this means visually integrated image contributed by the protected information and the replay of the first holographic structure can be realized, (please see the abstract). Although this reference does not explicitly that "the replay characteristics of the structures to generate a visually integrated image whose optically variable generating effect appears to derive from *one optical effect generating structure*" (**with respect to amended claims 71 and 87**), namely the protected information is yield by the second holographic structure, Mallik does teach explicitly that the second holographic optically variable effect generating structure is viewable through the first holographic optically variable effect generating structure. The explicitly patterned or discontinuous layer of reflective material (25 or 123) make the incident light (107, Figure 11) to incident on the second structure (103) via the first structure (23). The diffracted lights (109) and (111) which represent the replayed images from the first structure and the second structure. Although

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this reference does not teach *explicitly* if the image characteristics (i.e. the replayed diffracted lights are "a visually integrated image"), such modification would have been obvious to one skilled in the art to design the protected information being recorded in second holographic structure or to have the replayed images from the first and second structures to provide visually integrated viewing of the two holographic structures, for the benefit of providing a harmonious authentication measure or decorative appearance as desired. Noted the **same** incident light (107) is capable to replay **both** images from the first structure (23) and the second structure (103) at the **same time**. As shown in Figure 11, by moving viewing positions, the observer is capable of viewing the images replayed by diffracted light (109) and (111) in an "integrated" manner to provide "visually integrated image". Furthermore, Mallik teaches explicitly that the *precise angles* of the replay image lights (109 and 111) could be designed and adjusted by the optical geometry used in making the original masters of the first and second structures, (please see column 10, lines 25-30). Although Mallik teaches one design of viewing one reconstructed image from one of the holograms at a time, this actually means it is within general level of skill of a worker in the art to design reconstructed holographic images from the two holograms to be seen in integrated manner or independent manner. Furthermore, **Yu et al** in the same field of endeavor teaches multiple layer holograms with stacked hologram layers that each reconstructs a separate image and the separate images are superimposed and combined to provide a single visually integrated image that appears as single hologram diffracting from a single optical effect generating structure. It would therefore have been obvious to one skilled in the art to apply the teachings of Yu et al and Mallik to have the two reconstructed holographic images either *integrated* viewed or independently viewed to form an integrated image as appears from a single optical effect generating structure.

Claims 71 and 87 have been amended to include the phrase the first structure includes a reflective layer formed by high refractive index dielectric material. Mallik teaches that the first relief hologram includes a discontinuous reflective layer serves as partial reflective layer. However it does not

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teach that the partially reflective layer is formed by high refractive index dielectric material. **Cuelli** teaches a semi-transparent reflective layer for a hologram wherein the semi-transparent reflective layer may also be formed by using high refractive index dielectric layer, (please see column 4, lines 56-65). It would have been obvious to one skilled in the art to make the reflective layer a high refractive index dielectric material for the benefit of making the reflective layer a semi-transparent reflective layer to allow the second relief hologram be viewed without obstruction. The first relief hologram is regarded having a grating structure.

The method form making the security device as recited in **claim 87** as rejected based on **Mallik** in view of **Yu et al**, **Heckenkamp et al** and **Cuelli** as described for claim 71 above. **With regard to claim 88**, **Mallik** teaches that the first hologram relief pattern (23 or 121) can be formed by *embossing* into corresponding surface of an embossing layer, (please see column 11, lines 29-30).

With regard to claim 74, as shown in Figures 11-13, the first holographic structure is formed of a pure grating structure with the reflective layer conformed to the microstructure of the holographic structure and therefore in combine with it.

With regard to claims 75 and 93, these references teach that the optical variable structures are diffractive or holographic structures, which certainly includes the so-called zero-order diffractive device.

With regard to claims 77 and 94-95, **Mallik** teaches that the first and the second holograms are formed separately and attached to each other via an adhesive layer, (please see column 12, lines 17-20).

With regard to claims 79-80, 83, 98, and 99, **Mallik** teaches that the first and second relief holograms are supported by a carrier layer (31, Figure 3A) via a wax release layer (33, Figure 3A, please see column 5, lines 9-12). The authentication article having the first and second relief holograms can be attached to a substrate via an adhesive (27, Figure 3A).

With regard claims 82 and 89, **Mallik** teaches that the film for recording the relief hologram can be a plastic film, which is a polymer.

With regard to claims 84 and 85, this reference does not teach explicitly to include dye or pigment. However Mallik teaches that the authentication article further comprises printed photograph (15) or writing (13). This printed photograph or writing may include or be modified to include dye or pigment to make the printed information has color appearance. Heckenkamp et al in the same field of endeavor teaches that dye can be used in the printing process to provide color print in the holographic security device, (please see column 10, lines 13-20 and 29-32). Heckenkamp et al further teaches that luminescent dye can be used to add additional sensation to the color printing, (please see column 21, lines 1-3). It would then have been obvious to apply the teachings of Heckenkamp et al to modify the security device to include luminescent dye to add further color features into the device.

With regard to claim 86, Mallik teaches that multiple holograms can be formed in the authentication article. It would have been obvious to one skilled in the art to provide one or more relief holograms in between the first and second relief holograms for the benefit making desired designs for the security feature in the authentication article.

With regard to claims 100-103, Mallik teaches that the authentication article may be applied on documents such as credit card or stock certificated wherein the credit card and stock certificate is a form of banknote, (please see column 1, lines 21-30).

7. Claims 76, 81, and 90 are rejected under 35 U.S.C. 103(a) as being unpatentable over the patents issued to Mallik, Heckenkamp et al, Yu et al and Cueli as applied to claims 71 and 87 above, and further in view of the patent issued to Staub et al (PN. 5,886,798).

The *authentication article* including a first and second relief holograms taught by Mallik in combination with the teachings of Heckenkamp et al, Yu et al and Cueli as described for claims 71 and 87 above have met all the limitations of the claim.

With regard to claims 76 and 90, Mallik teaches that the relief hologram are formed by embossing or casting methods but it does not teach that the hologram may also be formed by e-beam lithograph. Staub et al in the same field of endeavor teaches that e-beam lithograph is a standard method for producing hologram, (please see column 8, lines 1-10). It would then have been obvious to one skilled in the art to apply the teachings of Staub et al to use e-beam lithography process as an alternative method for producing the holograms.

With regard to claim 81, Mallik teaches that the hologram may be formed in a plastic film but it does not teach that it may also be formed in a lacquer layer. Staub et al in the same field of endeavor teaches that the relief hologram may be formed in a lacquer layer, (5, please see Figure 1). It would then have been obvious to one skilled in the art to apply the teachings of Staub et al to make the relief hologram in a lacquer layer since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416.

8. Claims 78 and 97 are rejected under 35 U.S.C. 103(a) as being unpatentable over the patents issued to Mallik, Heckenkamp et al, Yu et al and Cueli as applied to claims 71 and 87 above, and further in view of the patent issued to Ishibashi et al (PN. 6,861,388).

The *authentication article* including a first and second relief holograms taught by Mallik in combination with the teachings of Heckenkamp et al, Yu et al and Cueli as described for claims 71 and 87 above have met all the limitations of the claim.

Mallik teaches to use laminated adhesive to adhere the layers together, however it does not teach explicitly to make the adhesive include luminescent material. Ishibashi et al in the same field of endeavor teaches a security device wherein luminescent pigment may be added into the adhesive to enhance the counterfeit prevent effect, (please see column 7, lines 17-21). It would then have been

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obvious to one skilled in the art to apply the teachings of Ishibashi et al to add the luminescent material into the adhesive layer for the benefit of enhancing the counterfeit prevention effect.

9. Claim 96 is rejected under 35 U.S.C. 103(a) as being unpatentable over the patent issued to Mallik, Heckenkamp et al, Yu et al and Cueli as applied to claim 87 above, and further in view of the patent issued to Kaule et al (PN. 6,294,241).

The *authentication article* including a first and second relief holograms taught by Mallik in combination with the teachings of Heckenkamp et al, Yu et al and Cueli as described for claim 87 above have met all the limitations of the claim.

Mallik teaches a laminated adhesive used to bond the first and second relief holograms, however it does not teach that the adhesive is UV curable. UV-curable adhesive is well-known in the art for adhering optical layers. Kaule et al in the same field of endeavor teaches that a UV-curable adhesion may be used to adhere the security document with hologram layer, (please see column 3, line 28-29, and column 4, lines 21-30). It would then have been obvious to one skilled in the art to use a UV-curable adhesive as the adhesive to bond the holograms for the benefit of making the bonding activated by using UV radiation.

10. Claims 104, 106-107, 109, 111-120, 114-116, 117-120, 122-123, 126-131 are rejected under 35 U.S.C. 103(a) as being unpatentable over the patent issued to Mallik (PN. 5,128,779) in view of the patents issued to Heckenkamp et al (PN. 5,801,857) and Yu et al (PN. 5,282,066).

Mallik teaches an *authentication item*, serves as the *security device*, that is comprised of a *first and second holographic relief structures*, (23 and 103, Figure 11 or 121 and 127, Figure 12), that serve as the first and second *diffraction or holographic optically variable effect generating structures* wherein the first and second holographic relief structures are *superposed* to each other with the second holographic

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relief structure is viewable through the first holographic relief structure. Mallik teaches that the first holographic relief structure (23 or 121) further comprises a *discontinuous* layer of reflective aluminum metallic material, (25 or 123, column 4, lines 35-36). The discontinuous layer of reflective metal material registered with the surface relief structure of the first holographic optically variable effect generating structure.

This reference has met all the limitations of the claims with the exception that it does not teach explicitly to include dye or pigment between the holographic structures. However Mallik does teach that the authentication article further comprises printed photograph (15) or writing (13). This printed photograph or writing may include or be modified to include dye or pigment to make the printed information has color appearance. **Heckenkamp et al** in the same field of endeavor teaches that dye can be used in the printing process to provide color print in the holographic security device, (please see column 10, lines 13-20 and 29-32). Heckenkamp et al further teaches, that luminescent dye can be used to add additional sensation to the color printing, (please see column 21, lines 1-3). It would then have been obvious to apply the teachings of Heckenkamp et al to modify the security device to include luminescent dye to add further color features into the device. It is considered obvious matters of design choice to one skilled in the art to place the dye at desired positions for providing the desired color effect.

Mallik teaches explicitly that the authentication item via the discontinuous hologram is formed in a pattern to permit viewing the protected information through it and the viewing of an authenticating image or other light pattern reconstructed from the it in reflection can be viewed this means visually integrated image contributed by the protected information and the replay of the first holographic structure can be realized, (please see the abstract). Although this reference does not explicitly that *"the replay characteristics of the structures to generate a visually integrated image whose optically variable generating effect appears to derive from one optical effect generating structure"*, (with respect to **amended claims 104 and 117**), Mallik does teach explicitly that the second holographic optically

variable effect generating structure is **viewable** through the first holographic optically variable effect generating structure. The explicitly patterned or discontinuous layer of reflective material (25 or 123) make the incident light (107, Figure 11) to incident on the second structure (103) via the first structure (23). The diffracted lights (109) and (111) which represent the replayed images from the first structure and the second structure. Although this reference does not teaches *explicitly* if the image characteristics (i.e. the replayed diffracted lights are "a visually integrated image"), such modification would have been obvious to one skilled in the art to design the protected information being recorded in second holographic structure or to have the replayed images from the first and second structures to provide visually integrated viewing of the two holographic structures, for the benefit of providing a harmonious authentication measure or decorative appearance as desired. Noted the **same** incident light (107) is capable to replay **both** images from the first structure (23) and the second structure (103) at the **same time**. As shown in Figure 11, by moving viewing positions, the observer is capable of viewing the images replayed by diffracted light (109) and (111) in an "**integrated**" manner to provide "visually integrated image". Furthermore, Mallik teaches explicitly that the *precise angles* of the replay image lights (109 and 111) could be designed and adjusted by the optical geometry used in making the original masters of the first and second structures, (please see column 10, lines 25-30). Although Mallik teaches **one** design of viewing one reconstructed image from one of the holograms at a time, this actually means it is within general level of skill of a worker in the art to design reconstructed holographic images from the two holograms to be seen either in integrated manner or independent manner. Furthermore, **Yu et al** in the same field of endeavor teaches multiple layer holograms with stacked hologram layers that each reconstructs a separate image and the separate images are superimposed and combined to provide a single visually integrated image that appears as single hologram diffracting from a single optical effect generating structure. It would therefore have been obvious to one skilled in the art to apply the teachings of Yu et al and Mallik to have the two reconstructed holographic images either *integrated* viewed or

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independently viewed to form an integrated image as appears from a single optical effect generating structure.

The method form making the security device as recited in **claim 117** as rejected based on Mallik in view of Heckenkamp et al as described for claim 71 above. **With regard to claim 118**, Mallik teaches that the first hologram relief pattern (23 or 121) can be formed by *embossing* into corresponding surface of an embossing layer, (please see column 11, lines 29-30).

With regard to claims 106, Mallik teaches that second relief hologram pattern further comprises an opaque, reflective layer (105 or 129, column 10, line 4-6 and column 11, lines 52-54).

With regard to claims 107 and 120, Mallik teaches that the first hologram relief pattern (23 or 121) can be formed by *embossing* or casting methods and the second hologram relief pattern (103 or 127) can be formed by casting, (please see column 11, lines 43-53). Embossing method is different from casting method.

With regard to claims 109, and 122-123, Mallik teaches that the first and the second holograms are formed separately and attached to each other via an adhesive layer, (please see column 12, lines 17-20).

With regard to claims 111-112, 115, 126, and 127, Mallik teaches that the first and second relief holograms are supported by a carrier layer (31, Figure 3A) via a wax release layer (33, Figure 3A, please see column 5, lines 9-12). The authentication article having the first and second relief holograms can be attached to a substrate via an adhesive (27, Figure 3A).

With regard claims 114, and 119, Mallik teaches that the film for recording the relief hologram can be a plastic film, which is a polymer.

With regard to claim 116, Mallik teaches that multiple holograms can be formed in the authentication article. It would have been obvious to one skilled in the art to provide one or more relief

holograms in between the first and second relief holograms for the benefit making desired designs for the security feature in the authentication article.

With regard to claims 128-131, Mallik teaches that the authentication article may be applied on documents such as credit card or stock certificate wherein the credit card and stock certificate is a form of banknote, (please see column 1, lines 21-30).

11. Claims 108, 113, and 121 are rejected under 35 U.S.C. 103(a) as being unpatentable over the patents issued to Mallik, Heckenkamp et al and Yu et al as applied to claims 104 and 117 above, and further in view of the patent issued to Staub et al (PN. 5,886,798).

The *authentication article* including a first and second relief holograms taught by Mallik in combination with the teachings of Heckenkamp et al and Yu et al as described for claims 104 and 117 above have met all the limitations of the claim.

With regard to claims 108 and 121, Mallik teaches that the relief hologram are formed by embossing or casting methods but it does not teach that the hologram may also be formed by e-beam lithograph. Staub et al in the same field of endeavor teaches that e-beam lithograph is a standard method for producing hologram, (please see column 8, lines 1-10). It would then have been obvious to one skilled in the art to apply the teachings of Staub et al to use e-beam lithography process as an alternative method for producing the holograms.

With regard to claim 113, Mallik teaches that the hologram may be formed in a plastic film but it does not teach that it may also be formed in a lacquer layer. Staub et al in the same field of endeavor teaches that the relief hologram may be formed in a lacquer layer, (5, please see Figure 1). It would then have been obvious to one skilled in the art to apply the teachings of Staub et al to make the relief hologram in a lacquer layer since it has been held to be within the general skill of a worker in the art to

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select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416.

12. Claims 110 and 125 are rejected under 35 U.S.C. 103(a) as being unpatentable over the patents issued to Mallik, Heckenkamp et al and Yu et al as applied to claims 104 and 117 above, and further in view of the patent issued to Ishibashi et al (PN. 6,861,388).

The *authentication article* including a first and second relief holograms taught by Mallik in combination with the teachings of Heckenkamp et al and Yu et al as described for claims 104 and 117 above have met all the limitations of the claim.

Mallik teaches to use laminated adhesive to adhere the layers together, however it does not teach explicitly to make the adhesive include luminescent material. Ishibashi et al in the same field of endeavor teaches a security device wherein luminescent pigment may be added into the adhesive to enhance the counterfeit prevention effect, (please see column 7, lines 17-21). It would then have been obvious to one skilled in the art to apply the teachings of Ishibashi et al to add the luminescent material into the adhesive layer for the benefit of enhancing the counterfeit prevention effect.

13. Claim 124 is rejected under 35 U.S.C. 103(a) as being unpatentable over the patent issued to Mallik, Heckenkamp et al and Yu et al as applied to claim 117 above, and further in view of the patent issued to Kaule et al (PN. 6,294,241).

The *authentication article* including a first and second relief holograms taught by Mallik in combination with the teachings of Heckenkamp et al and Yu et al as described for claim 117 above have met all the limitations of the claim.

Mallik teaches a laminated adhesive used to bond the first and second relief holograms, however it does not teach that the adhesive is UV curable. UV-curable adhesive is well-known in the art for

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adhering optical layers. **Kaule** et al in the same field of endeavor teaches that a UV-curable adhesion may be used to adhere the security document with hologram layer, (please see column 3, line 28-29, and column 4, lines 21-30). It would then have been obvious to one skilled in the art to use a UV-curable adhesive as the adhesive to bond the holograms for the benefit of making the bonding activated by using UV radiation.

Allowable Subject Matter

14. Claim 32 is allowed.
15. Claim 105 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
16. The following is a statement of reasons for the indication of allowable subject matter: of the prior art references considered none disclosed a security device having first and second superposed diffractive or holographic optically variable effect generating structures where the structures are first and second zero-order diffractive device with the first zero-order diffractive device generates an image in first color at a first orientation and in a second color at a second orientation and the second zero-order diffractive device generates an image in the second color in the first orientation and the first color in the second orientation, as set forth in the claim.

Response to Arguments

17. Applicant's arguments with respect to amended claims 71, 87, 104 and 117 and their respective dependent claims have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Audrey Y. Chang whose telephone number is 571-272-2309. The examiner can normally be reached on Monday-Friday (9:00-4:30), alternative Mondays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephon B. Allen can be reached on 571-272-2434. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Audrey Y. Chang, Ph.D.

*/Audrey Y. Chang/
Primary Examiner, Art Unit 2872*